DOCUMENT RESUME

ED 427 014 TM 029 350

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TITLE School Improvement That Works: Enhancing Academic Achievement through Motivational Change. A Longitudinal Qualitative Investigation.
PUB DATE 1998-04-00
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Diego, CA, April 13-17, 1998).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Cognitive Processes; Educational Change; *Educational Improvement; Foreign Countries; High School Seniors; High Schools; Longitudinal Studies; Males; Metacognition; School Culture; Secondary School Teachers; *Student Motivation
IDENTIFIERS Australia; Teacher Researcher Relationship

ABSTRACT

A longitudinal phenomenographic investigation was conducted into a cultural change process at a secondary school. This change process positively influenced senior students' academic motivation, cognition, and achievement. The study involved a retrospective examination of the components of the change process and a specific investigation of how these components operated within the current senior-year cohort. Participants were 107 students and 6 teachers at a secondary boys school in Sydney, New South Wales (Australia). Some of the most salient components of the cultural change process were the establishment of an academic culture rewarding effort as well as achievement, the establishment of cooperative "team-based" approaches to the development of adaptive study skills and routines, and the development of effective and ongoing pastoral care procedures for students. The specific mechanisms through which these components influenced students included developing mastery goal orientations among students, facilitating students' interest in academic learning, and promoting the use of cognitive and metacognitive strategies. The study also demonstrates the usefulness and validity of researcher-practitioner collaborations in educational research in general and school improvement work in particular. (Contains 27 references.) (SLD)

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School Improvement That Works: Enhancing academic achievement through motivational change. A longitudinal qualitative investigation.

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Paper presented at the annual meeting of the American Educational Research Association

San Diego
April 13-17, 1998

This paper presents the results of a longitudinal phenomenographic investigation into a cultural change process at one secondary school which has positively influenced senior students' academic motivation, cognition, and achievement. The study involved both a retrospective examination of the components of the change process (which has been operating for six years) and a specific investigation of how these components operated within the current senior year cohort at the school.

Some of the most salient components of the school's cultural change process positively influencing students' motivation, cognition, and achievement included the establishment of an academic culture rewarding effort as well as achievement, the establishment of cooperative 'team-based' approaches to the development of adaptive study skills and routines, and the development of effective and ongoing pastoral care procedures for students. The specific mechanisms through which these components positively influenced students' motivational orientations, cognitive processes, and academic achievement included developing mastery goal orientations amongst students, facilitating students' interest in academic learning, and promoting the effective use of cognitive and metacognitive strategies.

In addition to the above, the paper also demonstrates the utility and validity of researcher-practitioner collaborations in educational research, in general, and school improvement studies, in particular. The present study is the product of such a collaboration and the parameters of this collaboration, which have assisted the conduct, modification, and outcomes of the research, are described in the introduction to this paper.

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Introduction

The research described in this paper is the result of a productive collaboration between a school practitioner and a university researcher. Some key features of this collaborative relationship are presented briefly below both as an introduction to the present research and as a metaphor for others who may wish to pursue similar collaborations in their research and practice.

Reflections on the Researcher-Practitioner Collaboration

A key feature of the present collaboration is that it represents an explicitly recognised partnership between equals. Both partners in the research (the university researcher and the school practitioner) brought complimentary skills and knowledge to the research project. The school practitioner, for example, who had been involved in action research within his own institution prior to the current collaboration, bought both an intimate knowledge of the research setting as well as a set of reasonably well developed research questions which acted as a catalyst for the present research. The practitioner also bought a strong set of personal beliefs, professional attitudes and grounded theories concerning what 'worked' in teaching. The university researcher, on the other hand, bought both a theoretical framework, and some practical research skills, which facilitated an investigation of the research questions and provided a means by which results of this investigation could be analysed, interpreted, and integrated both with the grounded theory of the practitioner and previous research findings extant in the literature.

Moreover, the equality of the research partnership meant that both partners were free to contribute to the *ongoing* development of the research processes both in terms of methodology and focus. The equality of the relationship meant, for example, that each partner had the power to say "I'm not interested in that avenue" or the confidence to admit "I don't understand that." Thus, the interaction between equal, non-judgemental, partners allowed for a reflective process which, in turn, facilitated ongoing modification of the research.

The maintenance of equality in the research partnership also meant that, over time, the interpersonal relationship between the partners developed. This further enhanced the efficacy of research processes. In particular, the developing quality of the interpersonal relationship between the research partners led to a developing trust between the partners. This trust enhanced the openness of reflections made, in particular, by the school practitioner. A suspicion held by many practitioners of university based researchers is that they hold to ideologically based interpretations of what they see in schools and are too ready to judge events, and people, in the light of these preconceived notions. Another commonly held concern is that external researchers may not give full significance to the 'messy' reality of school life, with its, at times, frustrating unpredictability and, occasionally, passionate interpersonal exchanges. In the present collaboration, however, these suspicions and concerns were allayed. In fact, both partners found that their equal participation in the research enhanced their confidence not only in their shared relationship but, importantly, in their ability to use that relationship to develop deeper understandings of the phenomena under investigation.

Thus, the quality of the research partners' interpersonal relationship enabled both partners to reflect honestly and extensively on their personal theories and practices in the light of the phenomena under investigation. For example, the

relationship between the research partners enabled the school practitioner to articulate difficulties effecting the academic progress of the current student cohort and to share concerns, relating to the provision of appropriate academic support for these students, in light of those difficulties. This, in turn, facilitated the formulation and modification academic practices within the school. On the other hand, the university researcher was able to reflect upon difficulties pertaining to both the usefulness of the theory within which the research was situated and specific difficulties in applying this theory to the present research setting.

Finally, one unintended, but welcome, consequence of the research collaboration was that the research process gave the school practitioner, in particular, renewed energy and interest in his work at school. Too often, it seems, education systems expect teachers to 'soldier on', at a constant level of enthusiasm and commitment, without allowing them opportunity to withdraw, reflect and, hence, modify their teaching practice. Yet it is precisely this sort of active reflection which enhances the motivation and commitment of professional educators. The present collaboration provided the practitioner with a mechanism which facilitated an articulation and assessment of the practitioner's (and the school's) teaching policies and practices. As a result, the school practitioner was, often, encouraged and rewarded. This was especially true when some of the policies and practices which had been formulated and implemented within the present research setting found support from the research literature. Access to this literature, which is not, typically, widely read by practitioners, was provided by the university researcher as a more or less natural part of the research collaboration. Thus, the collaboration provided both the 'space' and the resources, through which the self-concept of the practitioner as 'active policy formulator and implementor ' was enhanced.

The research which follows is situated within the professional and interpersonal context described above. This context is only briefly described here. However, it does provide some insight into the collaborative relationship underpinning the present research. In doing so the above description also provides a metaphor which may be useful to others developing, and engaging in, similar research partnerships elsewhere.

Theoretical Perspectives

Improving students' academic motivation, cognition, and achievement are key concerns for educational practitioners and researchers. Moreover, understanding *interactions* between students' motivation, cognition, and achievement has also been an area of both practical and theoretical interest. For example, several recent studies (see reviews by Pintrich, Marx, & Boyle 1993; Ames, 1992; Blumenfeld, 1992) have indicated that the *quality* of students' motivation is a salient determinant of their subsequent academic cognition and achievement. As a result of studies such as these, attention has turned to the ways in which teachers and schools may enhance the quality (as well as the quantity) of students' motivation. Specifically, several authors have identified the need for research which clearly specifies classroom and school-wide processes and practices which may enhance students' academic motivation and performance (eg. Urdan & Maehr, 1995; Anderman & Maehr, 1993; Blumenfeld, 1992).

Theoretical studies of student motivation (particularly those utilising social-cognitive perspectives) have begun to identify components of learning environments which may influence the quality of students' motivation. These components include the

nature of academic tasks assigned to students, the characteristics of authority structures within classes and schools, and the ways in which students' academic work is recognised and evaluated (Ames, 1992). Despite recognising these components, however, there has been, to date, little systematic research *substantiating* the effects of these (and other) components of school learning environments on students' motivation. Moreover, the specific psychosocial processes or mechanisms by which these components may influence students' motivation, cognition, and achievement are, largely, unexplored.

One plausible reason for this phenomenon may be a lack of sufficient exploratory research, especially in 'real life' classroom and school settings (Lemos, 1996). Such studies may sensitise researchers to a range of salient components of learning environments impacting upon students' academic motivation, cognition, and achievement. Moreover, exploratory studies may begin to implicate specific processes by which identified components of learning environments may influence students' motivation and achievement.

Qualitative research is considered particularly appropriate for such exploratory studies. Moreover, one particular approach to qualitative research, *phenomenography*, has been widely used in educational research in general (Biggs & Watkins, 1993) and, specifically, with respect to factors influencing students' motivation, cognition, and achievement (Oldfather, 1994). The phenomenographic approach to qualitative research studies learning from the *learner's* perspective, rather than from the *teacher's* perspective alone. It focuses on the ways in which students interpret and react to learning situations. This is important as, in some situations at least, students' perceptions and interpretations of events may shape their academic behaviour even more than the events themselves (Eccles, Adler, Goff, Futterman, Kaczala, Meece, & Midgley, 1983). Blumenfeld (1992) confirms that research incorporating qualitative approaches, such as that described above, will make a useful contribution to 'thickening' the descriptions of students' motivational processes and how they operate in 'real-life' classroom and school settings to facilitate students' cognitive engagement in learning and their subsequent academic achievement.

Objectives

Given the introduction above, the objectives of the present study were to:

(a) determine the most salient components of the cultural change process implemented in one school which has resulted in significant improvements to students' academic motivation, cognition, and achievement; and

(b) identify the mechanisms by which components of this cultural change process have enhanced students' motivation, cognition, and achievement.

Participants

Participants in the study were students (n = 107) and teachers (n = 6) studying and teaching in a secondary boys school in Sydney, NSW, Australia. The students were all in their final year of secondary schooling (Year Twelve). The participating teachers were all teaching the current Year Twelve students. Participating students and teachers came from a wide cross-section of cultural, socio-economic, and academic backgrounds.

Method

The entire senior year cohort of the school was followed for the final twelve months of their secondary schooling. The data, in the form of interviews transcripts and observational records, were collected continuously across the entire school year. Approximately 130 individual interviews and were conducted and 200 observational records were completed. Thus, the study used a *combination* of phenomenographic methods (interviews and observational studies) to ascertain the components of the change process and its particular effects on the present motivation and achievement of students' participating in the study. The teachers were interviewed throughout the year, particularly at strategic points in the students' academic development.

Rather than inviting the students and teachers to participate in the study *per se*, they were invited to be *co-researchers* (Oldfather, 1994). This implies that the participants were viewed as being experts in the research, at least with regard to their own experiences and perceptions. As such, the interviews were participative rather than directive and the observations involved self-reflection on the part of participants as well as structured reflection on the part of the authors.

In order to maximise the contextual and temporal validity of the research, the interviews were conducted in the school at various times and during the school day. Concurrently, the observational studies were used to complement descriptions generated in the interviews. Thus, both students' reported motivational orientations and cognitive processes, and their actual operation in 'real life' school contexts, was investigated. In this way both the reported and actualised components of the change process were investigated. Constant comparative methodology (Bogdan & Biklen, 1982) was used throughout to inform both the research procedures and the analysis of data during the course of the study. In this way a 'grounded theory' (Strauss & Corbin, 1990) was developed from the data.

Once the data were gathered, the categories, in this case the components of the cultural change process and their effects on students' motivational orientations, cognitive processes, and academic achievement, were inductively generated (Erickson, 1986). That is, the grounded theory developed during the study guided the development of categories from the observational records and interview transcripts. In order to assess the validity of the categorisation, randomly selected interview responses and observations were independently categorised by participants in the study. The degree of fit between the participants and the researchers' categorisations acted as measure of the appropriateness of the categories. Modifications to the categories based on these comparisons were made where appropriate.

Results

A central difficulty encountered when describing the features of any educational program is to balance adequate description, which captures some of the complexity of the human relations involved, without becoming lost in a maze of detail. What follows, then, is a summary of the key components of the student management, motivational, and academic policies employed in Year Twelve (the final year of secondary school in New South Wales). These policies, first described by Cunneen and Masters (1996), were inaugurated in 1991 and continue through to the present. All policies are interrelated and mutually supportive. The results are reported in a semi-narrative fashion as this form of reporting captures best, in the present case at least,

some of the detail, as well as the overall operational contexts, of the policies and processes described below.

Management Policies

Year Twelve students are managed by a pastoral care team of 'rollcall' teachers who monitor students' attendance and act as a useful conduit of information to and from students. The most active members of the pastoral care team are the Year coordinators. There are two coordinators in Year Twelve: one is particularly responsible for pastoral matters, the other is primarily concerned with the academic progress of students. Both coordinators are highly and deliberately visible around the school and work closely together to coordinate the implementation of the school's management policies.

The first of these policies comprises the basic organisational practices of the school with respect to its final year students. In the first weeks of the year, Year Twelve students and their parents are oriented towards the school's students management policies at an Information Evening. These policies are not disciplinary measures, but are an agreed framework of behaviours which have (in past years) been formulated in a school appraisal process involving parents, teachers and students. Students are expected to attend school each day, and parents are asked to contact the school if any student will be absent. Whilst at school, students are expected to wear uniforms, display a standard range of haircuts, refrain from wearing jewellery, and respect their fellow students and teachers. Punishments for infractions usually involve loss of privileges such as the right to leave school early or to leave school grounds during lunchtime. However, the emphasis is on preventing trouble from occurring rather than on reacting to difficulties after they have arisen.

Under the guidance of the Pastoral Care Coordinator, the above policies are linked to a program of individual care for all students. Each student is encouraged to seek emotional and practical academic support from the school in response to difficulties they may experience. Traumas such as family crises, legal difficulties, or general social difficulties, are responded to sympathetically. Professional help may be supplied to students experiencing difficulties if necessary. Thus, the schools management approach balances behavioural adjustment and pastoral care. In this context, students are encouraged to see the school as an institution which can keep them out of trouble rather than get them into it. It is always the case that students who are involved in disciplinary situations are shown that the school does not hold grudges, and that their infractions do not sour normal relations with staff.

One key management policy with particularly strong academic implications is that students are expected to complete homework. The completion of homework is enforced through an early morning detention system. Students who are persistent 'non-completers' of homework attend school at eight am. (half an hour before school normally starts) and complete their homework under supervision. As the school year progresses increasing numbers of students also avail themselves *voluntarily* of this early morning facility. It is common for fifty-percent of Year Twelve students to be working *unsupervised* at school early in the morning. The early morning group is called 'The Breakfast Club' and can attain a certain status in the eyes of students. The early starts allow students to access individual advice regarding study from the year coordinators and other teachers. Students made to attend school early generally see it as an opportunity to learn, rather than a punishment.

Educational and Motivational Policies

The school explicitly and purposefully combines its educational and motivational policies and practices. The two sets of policies and practices are seen to be mutually supportive. For example, effective study skill training (one of the school's educational policies) promotes student motivation which, in turn, is evidenced in students implementing appropriate study skill routines and practices. Conversely, motivational 'events' (one of the school's motivation policies) also include some elements of practical study skill training so as to effectively direct the course of students' motivation.

Motivational Policies.

The motivational program at the school deliberately combines both pressure and support for students, and encourages students to take both an individual and corporate perspective on their studies. Chief amongst the school's motivation policies are (a) regular motivational speeches, (b) public and private affirmations of *both* the effort and success of individual students, and (c) the enlistment of key students to influence the behaviour and attitudes of others. These policies are enacted by both Coordinators in conjunction with other teaching staff at the school.

Motivational speeches are given by either, or both, Coordinators at scheduled fortnightly meetings in which the entire Year Twelve cohort participates. The style of the speeches may be anything from avuncular to polemic. Additional meetings are held at the beginning of the year and just before the examinations. Meetings usually take fifty minutes. The overall theme of the speeches is that Year Twelve is not simply an examination year but a bridge between adolescence and adulthood. Preparing for, and sitting, the Higher School Certificate (the major, state-wide, end of secondary school, tertiary entrance examination) is simply the first of many challenges students will meet in their future personal and professional lives. Year Twelve is presented as an opportunity to achieve success relative to effort, to experience the satisfaction which comes from completing an important task over a sustained period, to experience the comradeship of the other members of the cohort, to exercise fledgling leadership and team participation skills, and to put aside the self indulgent behaviour of younger years. It is constantly stressed that any result which comes from effort is to be lauded, and that the students comprise a team, to which each person contributes, so that the overall academic success of the year is assured. In this way, students are encouraged to take responsibility (and credit) for the combined results of the year. Finally, the speeches emphasise the opportunities which exist for young people beyond school, the obstacles to these opportunities which poor academic performance presents, and the necessity for each person to set and follow their own personal and academic agenda. A common slogan used in the speeches is: "take control of your life!"

In addition to the speeches, there are a variety of situations in which the academic effort and success of individual students is publicly affirmed. Successful, hard working students are often presented individually to the entire school assembly. These presentations follow the same pattern as presentations made to top sporting teams, where individual students are made the focus of laudatory comments regarding their particular efforts and abilities. Small trophies, certificates, or simple congratulations are offered to the recognised students within this formal setting.

In addition to these public occasions there are many private affirmations of academic success. Teachers are encouraged to report to the year coordinators those students who have shown particular effort, improvement, or success. This report is

then passed on privately to the student. More generally, each student is spoken to privately, either as a recognition of success or as an exhortation to try harder, at least once a fortnight. In addition, there are many longer, more formal, interviews with each student and, as indicated, students may talk to a year coordinator or other teachers at any time. The request from a student: "Can I please talk to you?" is a call which punctuates each coordinator's day. Such requests arise from mutual trust and respect and are a sign that students see the school as a caring institution, *despite the tight academic and disciplinary codes enforced by the school*.

A final key strategy used to enhance the motivational profile of the school is the identification of influential students in the senior year cohort. These are quickly interviewed in order to interest them in the academic and pastoral aims of the school. By getting the 'movers and shakers on side', other students soon follow. This process even applies to students who, in the past, have used their social credibility amongst their peers to undermine the school's academic and pastoral aims. There have been some spectacular successes attributable, in part, to the nurturing of such students' egos by saying: "you're a leader", rather than berating them about past misdemeanours. Other 'official' leaders, such as prefects, are invited to special camps where they are given the opportunity to develop the skills and commitment necessary to positively influence the rest of the student body. Another mechanism for developing student leadership involves inviting past students to tell of their experiences in Year Twelve. Finally, all students are given the opportunity to be leaders to the junior students through a variety of monitoring systems, peer tutoring schemes, etc.

The overall thrust of the school's motivational policies and practices, then, is to supply all students with a variety of experiences which allow them to develop both their intrinsic *and* extrinsic motivation. The corporate aspect of the school's motivational program means that, although some students may resist attempts to get them to work independently, many are carried along by the broad expectation of effort generated during the school year. At the very least, resistant individuals will do some homework and not obstruct the learning of the others.

Academic Policies.

A variety of letters are sent to parents over the year. Each letter informs parents as to the academic work students should be doing at home, and encourages further contact if there are any problems which the school can resolve. These letters, in conjunction with parent information evenings, communicate school expectations regarding students' academic progress, in general, as well as comments concerning individual students' academic progress. Despite these systems, students are still exhorted to see their academic progress as their, as opposed to their parents' or teachers', responsibility.

Students, for example, are expected to produce their own study programs, especially for holiday periods. These programs are not simply allocations of study time-blocs, but establish of a list of achievable tasks which students are willing to attempt. Vague generalisations such as "re-read all texts" are discouraged as being unrealistic, failure-enhancing, objectives as opposed to confidence- or persistence-enhancing objectives. The process of determining what should be studied, and when, requires that students organise and prioritise the complex array of syllabus and assessment demands placed on them by the Higher School Certificate. This organising and prioritising is a long and difficult process for students throughout which they need constant advice and encouragement to persevere. The Studies Coordinator provides an audience for, and

feedback on, these programs and often uses them as the basis of individual discussions and interviews.

As well as providing successful role-models, addresses from past students (outlined above) are also used convey practical study information. Many past students are well known to present Year Twelve students as the recipients of academic achievement awards at school assemblies. To enhance these 'past-student' (and other) addresses, posters are placed around the Year Twelve area which summarise the study advice given. Naturally, individual teachers are kept informed as to the academic progress of students and provide their own study advice particular to their own curriculum areas.

Another important component of the school's academic (and pastoral) policies is to encourage students to participate in extra-curricular activities. Such extra-curricula activities include, particularly, education in responsible life skills. For example, realistic lectures, videos, and handouts made available to students on such topics as drugs, alcohol, driving and stress. In addition, a number of opportunities are provided for students to relax in supervised situations. There are camps, sport days, and meditation sessions. All students are encouraged to participate in at least one extra- curricular activity in order to keep their sense of perspective as they move towards the Higher School Certificate which is, often, an unpredictable adventure for all concerned.

Effects of the School's Policies on Students' Academic Motivation, Cognition, and Achievement

Both teachers and students were interviewed in order to ascertain the effects of the school's policies on students' motivation, cognition, and achievement. The interviewed teachers all had direct experience with Year 12 students in the school both before, and after, the intervention strategies (policies) were implemented. Whilst there have been variations between individual years and students, these teachers all noted an overall improvement in the performance and attitude of senior year students towards their studies. Moreover, whilst some of these changes are difficult to document (being at the level of intuition and impression), there have been a number of observed and measurable changes in the students' motivation, cognition and achievement. These are discussed below.

Motivational Effects.

A fundamental result of the school's policies has been an increase in both the quality and the quantity of students' motivation. Student interviews, for example, clearly indicate that students' perceive a link between effort and performance, and document the belief that high academic performance is worthwhile both intrinsically as well as extrinsically. Many students articulate ambitious academic goals, composed of a variety of subsidiary goals, which they hope will lead to a final desirable outcome. Of particular importance to the teachers has been the increasing number of students who voluntarily complete extra work, typically in the form of practise essays, examination tasks, or additional reading. This extra work is then willingly submitted for analysis in order to identify areas of strength and weakness. The revised work is then re-submitted.

In addition, there has been an increasing amount of work completed outside school hours. The school has, as a matter of policy, opened early and it is common for up to half of the year to use the extra time available to complete academic work. In

addition, students have come to willingly accept extra time spent at school before major examinations which was, previously, designated as a study 'vacation'. Finally, there has been a noticeable sense of pride in each Year's achievement as a whole, with a number of students commenting on their cohort's overall achievement as much, or even more, than their own.

Cognitive Effects.

As a result of their increasing motivation, students have shown a willingness to use a variety of effective learning strategies. The most noticeable strategy employed has been the use of study plans. As indicated above, all students are shown how to plan their work properly. They are encouraged to show their plans to staff, to discuss them, and to implement them. Many students will approach staff to ask how they should plan their work, with some students building close relationships with staff mentors who discuss their study strategies with them. In addition, students have demonstrated the effective use of strategies other than simple rote learning and 'mindless' note taking. Students have, for example, shown a willingness and ability to make links across subjects by using artistic works in reference to English, or Modern History. Certainly not all students have demonstrated the use of these deeper cognitive strategies. Nevertheless, even recalcitrant students have, at least, displayed a knowledge of these strategies, not disputed their effectiveness, and admitted that it is their 'fault' if they are not using them. Thus, students will generally accept that their use, or not, of deeper strategies varies not according to their ability but according to amount of effort they are willing to dedicate to their work.

A final aspect of the cognitive effects of the school's policies is that students appear better able to judge their own efforts appropriately. Self-appraisal is a learned skill, fostered by the school's programs, which assists students' to self-monitor the effectiveness of their learning. Students are, thus, equipped to ascertain weaknesses in their learning and implement responses to identified weaknesses. This self-monitoring is evident in the depth of students' responses to questions concerning their academic progress, particularly with respect to their knowledge of required content prior to examinations.

Academic Performance.

It is clear, from externally measured results, that the above factors have contributed to an increase in the students' level of achievement in the Higher School Certificate (HSC). One advantage of using the HSC as a measure of students' academic performance is that it is a state-wide, standardised examination. Thus, students' academic performances are referenced against the entire population of students in NSW sitting the HSC.

Analysis of the school's Higher School Certificate results between 1988 and 1996 indicate a clear improvement which began in the first year which implemented the new management, motivational, and academic policies described above. Analysis of the school's records indicate that no other variables concerning the student population appeared to effect students' results. For example, the school maintained a non-selective student admission policy throughout the period and the 'feeder area' of the school remained unchanged. Moreover, as in each year all students in the school apply for Tertiary Entrance Ranks (TERs - the 'headline' mark gained in the HSC) there is no 'missing data' for any students in any year.

TERs from 1988 to 1990 averaged 60 out of a possible 100. The results were spread over a wide range of possible marks, with twenty-eight percent (28%) of students attaining TERs above 80 and thirty-five percent (35%) of students with TERs below 40. Results in the other percentile bands were around state-wide averages. While there were generally a small number of high achieving students in every year from 1988 to 1990, the students' rankings tended to fall away dramatically after these exceptional students. Of particular concern was the large number of students with results below 40. Many of these students displayed a range of alienated behaviours, often self-destructive and nihilistic, with the high consumption of alcohol and excessively boisterous personal lifestyles being common features.

Since 1991, when the intervention policies were implemented, there has been a dramatic change in students' achievement as indicated by students' TERs. Thirty five percent (35%) of students, on average, now gain results above 80, and only twenty percent (20%) are below 40. Thus, there has been an improvement in results at both ends of the ranking scale. The average result across all students has moved to 65, a noticeable increase from 60. Typically, seventy percent (70%) of students gain results above 50. Twenty-five percent (25%) of students in the best performing year, 1995, achieved TERs above 90, with only sixteen percent (16%) below 40. It is worth noting that these results go against the state-wide trend for males' achievement scores in the HSC, where the disparity between males' and females' results has increased, and where males average TERs have moved steadily lower.

Discussion

School Policies

The school's management policies implicate several features hypothesised in the literature to improve students' motivation and achievement. First, the management policies embody a strong emphasis on leadership. Much has been said in the literature about the role of educational leadership in the development of appropriate adaptive motivational patterns and improved academic achievement (Maehr & Anderman, 1993; Maehr & Midgley, 1991). In particular, the role of the principal in providing effective leadership is associated with these developments (Maehr, Midgley, & Urdan, 1992). In the present study, however, it was the leadership role of the Year Coordinators that was seen to be critical in the establishment of effective management and other policies. This suggests that the principal should not be the sole focus of educational leadership research. Leadership at 'lower' levels of the school hierarchy may be at least, if not more, important than the Principal's leadership in some contexts.

Second, maintaining the balance between pastoral care and behaviour management, meant that the school's management policies were neither perceived to be authoritarian or permissive by students. Rather, an authoritative approach to student management, which included input from the students themselves, was embodied in the schools' management policies. The literature attests to the impact that appropriate authority structures and 'power' sharing' arrangements within schools may have on student motivation (Maehr & Anderman, 1993; Maehr & Midgley, 1991). Specifically, authoritarian structures are associated with student alienation and permissive structures are associated with the abrogation of appropriate student responsibility. Authoritative structures, in contrast, are associated with adaptive patterns of motivation and enhanced academic achievement (Ames, 1992). Such was the case in the present study.

Third, the schools' management policies were not seen as an end in themselves but, rather, as a means of maintaining the academic focus of students. Schools and

classes which maintain an academic focus have consistently report higher student motivation and achievement (McKeachie, Pintrich, Lin, & Smith, 1986). Moreover, policies with a clear point are adhered to more readily than those which appear arbitrary or inconsistent (Wolfgang & Glickman, 1986). The present study reports an approach whereby the management regime of the school is both meaningful to students and focussed on improving student outcomes.

The school's motivational policies display an interesting mix of intrinsic an extrinsic features. It has been common for the motivation literature to discuss intrinsic an extrinsic motivation as opposites (eg. Urdan & Maehr, 1995, Harter, 1981). Whilst, theoretically, this may be helpful, in practice a judicious combination of intrinsic and extrinsic motivations may enhance students' motivation more than either alone (Pintrich et al, 1993). In the present study, the school's motivational speeches had a strong intrinsic emphasis implicating the roles of effort, interest, and autonomy as demonstrated by the generation of individual study plans. The public affirmations, however, had a strong extrinsic orientation. These two components, however, were perceived by students to be complementary, rather than contradictory, elements of their school experience. Hence, Pintrich et al's (1993) assertion that these theoretically distinct orientations may in fact be held simultaneously by students appeared to be verified in this setting.

An interesting aspect of the school's motivational policies was the deliberate utilisation of affiliative links between students. Peer affiliation has long been recognised as a key influence on students' motivation (Wentzel, 1994). However, the authors are aware of no studies which have documented ways in which peer relationships have been deliberately and systematically managed to enhance the motivational and achievement outcomes of students. The present study shows, however, that relatively simple procedures may be adopted by teachers in order to 'tap into' this particularly salient correlate of students' motivation and outcomes.

The academic policies of the school may be summarised, in part, as an attempt to get students to locate responsibility for their academic progress within themselves. This internal locus of control, however, is actively supported by staff practices and effective academic routines. Thus, although the internal-external locus of control dichotomy has clarified issues relating to students motivation in the literature (eg. Deci & Ryan, 1985), in practice, in the present study at least, they appear to be complementarity perspectives on students' motivation. In other words, providing external 'support' (even in the form of compulsory homework sessions, for example) for students academic progress does not appear to undermine their desire, or capability, to take control of their learning for themselves. In fact, these external measures appear to actively *assist* students to take supported responsibility for their studies.

Second, the academic policies of the school promote effective goal setting. Goals, in the context of the school's academic policies, are not the reasons *why* students want to achieve in academic situations but are, rather, cognitive representations of *what* they want to achieve in academic situations. The school's policies encourage the students to set realistic, achievable, and meaningful goals for their academic progress. Moreover, these goals are reviewed regularly and students are given clear guidance as to strategies they may employ for achieving their self-set goals. All these features have been hypothesised to influence students motivation and achievement (Kanfer & Kanfer, 1991) and are clearly seen in operation at the school

Finally, the school situates it management, motivational, and academic policies within a 'whole of life' perspective. That is, academic achievement is not seen as an end in itself but as a means to the end of building a productive life. Moreover, consistent with this orientation, the school brings life issues into the academic context of the school. Thus, life issues and academic achievement interact in the students' experience. This holistic approach grounds students' academic achievement in a wider context which, in turn, supports students' commitment to their studies. An oft heard phrase is that 'academic achievement gives you opportunities for life'. This perspective is, again, consistent with the literature which suggests that, when student achievement is related to life issues, students attitudes and commitment to their study increases (Ryan, Connell, & Deci, 1985).

Effects of School Policies

The motivational effects of the schools policies are readily evident. With respect to their motivation, students reported in interviews the links they saw between effort and academic performance, the value they placed on academic performance, their desire to do extra, non-compulsory, out-of-school-hours academic work; their willingness to set and monitor study goals, and the pride they took in their own and others' academic achievement. Thus, the school policies appear to have resulted in tangible motivational outcomes amongst the students. Moreover, these outcomes are precisely the sort that are hypothesised to result from adaptive school policies and practices such as those outlined above (Meece, 1991). Thus, again, the study confirms hypothesised links between educational policy and practice and students' motivation and academic outcomes (Anderman & Maehr, 1993; Maehr et al, 1992).

With respect to their cognition, students reported the use of a variety of learning strategies, particularly deeper strategies such as elaboration and organisation. Moreover, even students who did not report deeper strategy use at least reported awareness of these strategies. Thus, these students repertoire of potential strategies increased even if they were not fully utilised. Strategy awareness, of course, is the first step towards eventual strategy use (Derry, 1990). Finally, improvements in students' abilities to self-appraise their academic knowledge and progress was evident from the interviews and their in-school behaviour. Self-appraisal is a critical element in improved academic performance (Paris & Winograd, 1990) and is related to students' motivational orientations (Schunk, 1990).

The 'bottom line', however, of the effects of the school's policies has been an increase in students' academic performance. Whilst increases in the quality of students' motivation and cognition are valuable in and of themselves, real interest focuses on the extent to which these improvements actually lead to enhanced academic performance. Students' TER scores, over the eight year period examined, show a clear improvement in their academic performance. Moreover, this improvement started from the year the new policies were introduced. This attests to the effectiveness of the policies and also to their potential attractiveness to practitioners. Policies with long lead times and equivocal effects are not generally well received by either practitioners or researchers. Of even more importance, however, is that the present policies have led to *sustained improvement* in academic performance over a period of years. This attests to the robustness of the positive effects of the policies over time. Thus, the effects of the policies are not just 'a flash in the pan'. A final feature of students' performance outcomes is their improvement across the range of possible outcomes. Thus, the

policies appear to be effective for high, middle, *and* low achievers. This means that the policies appear to be not only effective but equitable as well.

Summary

This study is important for the following reasons. First, almost without exception, there has been little research to date which has sought to systematically identify, and explore, features of learning environments identified in the literature which may influence students' academic motivation, cognition, and achievement. Certainly within the Australian context this is the case. The present study, in contrast, has explicitly and systematically explored one educational context to ascertain salient components of a change process already contributing to positive changes in students' academic motivation, cognition, and achievement. In doing so the study has confirmed the salience of features already identified in the literature and has also identified other features which may also impact upon students motivation and achievement.

Moreover, the study has also identified and examined specific mechanisms by which components of the cultural change process have influenced students' motivation, cognition, and achievement. These included developing a mastery goal orientation amongst students, facilitating students' interest in academic learning, and promoting the effective use of cognitive and metacognitive strategies.

Finally, and perhaps most importantly, the study has demonstrated the immediate and sustained effects of the policies on students' academic performance. Enhancing the motivation and cognition of students has, thus, led to tangible improvements in students' academic outcomes. Moreover these improvements apply to students with various levels of achievement, and even go against state-wide trends for males senior secondary results.

The authors gratefully acknowledge the participation of the students and staff of St Pius X College whose work in education is described here. Both their professional expertise and personal candour have made invaluable contributions to the progress and completion of this research.

References

Anderman, E.A., & Maehr, M.L. (1993). Motivation and schooling in the middle grades. *Review of Educational Research*, 64, 287-310.

Ames, C. (1992). Classrooms: Goals, structures and student motivation. *Journal of Educational Psychology*, 84, 261-271.

Biggs, J., & Watkins, D. (1993) The nature of student learning: A conceptual framework. In J. Biggs, & D. Watkins (Eds.), *Learning and teaching in Hong Kong: What is and what might be* (pp. 1-34). Hong Kong: Faculty of Education, University of Hong Kong.

Blumenfeld, P.C. (1992). Classroom learning and motivation: Clarifying and expanding goal theory. *Journal of Educational Psychology*, 84, 272-281.

Bogdan, R.C., & Biklen, S.K. (1982). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn & Bacon.

Cunneen, T., & Masters, R. (1996). Changing the culture of a boys' school. *Independence*, 21(1), 31-33.

Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenam.

Derry, S.J. (1990). Learning strategies for acquiring useful knowledge. In B.F. Jones, and L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 347-380). Hillsdale, NJ: Lawrence Erlbaum.

Eccles, J., Adler, T.F., Futterman, R., Goff, S.B., Kaczala, C.M., Meece, J.L., & Midgley, C. (1983). Expectancies, values, and academic behaviours. In J.T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco, CA: W.H. Freeman.

Erickson, F. (1986). Qualitative methods in research on teaching. In M.C. Wittrock (Ed.), *Handbook on Research in Teaching, 3rd Ed.* (pp. 119-161). New York: Macmillan.

Harter, S. (1981). A new self-report scale of intrinsic verses extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17, 300-312.

Kanfer, R., & Kanfer, F.H. (1991). Goals and self-regulation: Applications of theory to work settings. In M.L. Maehr, & P.R. Pintrich (Eds.), *Advances in motivation and achievement, Vol. 3* (pp. 287-326). Greenwich, CT: JAI Press.

Lemos, M.S. (1996). Student's and teacher's goals in the classroom. *Learning and Instruction*, 6, 151-171.

McKeachie, W.J., Pintrich, P.R., Lin, Y.G., & Smith, D. (1986). *Teaching and learning in the college classroom: A review of the research literature*. Ann Arbor, Michigan: National Centre for Research to Improve Post-Secondary Teaching and Learning. The University of Michigan.

Maehr, M.L., & Anderman, E.M. (1993). Reinventing schools for early adolescents: Emphasising task goals. *The Elementary School Journal*, 93, 593-610.

Maehr, M., & Midgley, C. (1991). Enhancing student motivation: A schoolwide approach. *Educational Psychologist*, 26, 399-428.

Maehr, M.L., Midgley, C., & Urdan, T. (1992). Student investment in learning: A focus for school leaders. *Educational Administration Quarterly*, 18, 412-31.

Meece, J.L. (1991). The classroom context and student's motivational goals. In M.L. Maehr, & P.R. Pintrich (Eds.), *Advances in motivation and achievement. A research annual, Vol. 7*. Greenwich, CT: JAI Press.

Oldfather, P. (1994). *When students do not feel motivated for literacy learning: How a responsive classroom culture helps*. Athens, GA: National Reading Research Centre.

Paris, S.G., & Winograd, P. (1990). How meta-cognition can promote academic learning and instruction. In B.F. Jones, & L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 15-52). Hillsdale, NJ: Lawrence Erlbaum.

Pintrich, P.R., Marx, R.W., & Boyle, R.A. (1993). Beyond cold conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of Educational Research*, 63, 167-199.

Schunk, D. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist*, 25, 71-86.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.

Ryan, R.M., Connell, J.P., & Deci, E.L. (1985). A motivational analysis of self-determination and self-regulation in education. In C. Ames, & R. Ames (Eds.), *Research on Motivation in Education, Vol. 2:* (pp. 13-51). San Diego, CA: Academic Press.

Urdan, T.C., & Maehr, M.L. (1995). Beyond a two goal theory of motivation and achievement: A case for social goals. *Review of Educational Research*, 65, 213-243.

Wentzel, K.R. (1994). Relations of social goal pursuit to social acceptance, classroom behaviour, and perceived social support. *Journal of Educational Psychology*, 2, 173-182.

Wolfgang, C.H., & Glickman, C.D. (1986). *Solving discipline problems. Strategies for classroom teachers, 2nd. Ed.* Boston: Allyn & Bacon.